1. INTRODUCTORY REMARKS

FREDERICK D. RICHEY

It would be pleasant to open this symposium by pointing with pride to the steady increase in the acre yield of corn in the United States that had resulted from the successful efforts of the corn breeders of the country. In the absence of the basic data necessary to such an opening, it would be equally pleasant to introduce a series of speakers who could present conclusive evidence of significantly increased yields which were due to breeding, obtained over relatively large areas for reasonably long periods of time. Unfortunately, there also is a lack of the material necessary to such a proceeding.

This is not intended to imply that breeding has accomplished nothing in the way of corn improvement. It seems incontrovertible that much if not all of the adaptation of corn to the many conditions under which it now is grown was accomplished by conscious selection. Indeed, corn is so poorly adapted to survive under natural conditions as to make it not impossible that Zea mays itself is the product of some prehistoric plant breeder. What methods were followed prior to the discovery of America is unknown. Most of the progress since then, however, has been the result of careful mass selection, either alone or following hybridization.

Some of the higher-yielding varieties of more recent origin were developed by ear-to-row selection, though whether better results were obtained by this method than could have been achieved through careful mass selection is problematic. Certainly, the evidence from varietal trials shows few if any varieties or strains developed by ear-to-row breeding which are on a materially higher plane of productiveness than the best of the mass-selected varieties in the locality.

Considerable increases in yield have been obtained experimentally from F₁ crosses between varieties of corn. For some reason, however, the use of such crosses has never become popular with the farmer and the interest which experimenters were taking in this method of improvement a few years ago has been transferred largely to methods involving selection within self-fertilized lines.

A consideration of mass selection, ear-to-row breeding, and the possibilities in F₁ varietal hybrids, however, was more appropriate to the symposium on corn breeding held at the winter meeting of

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